Electrical World

A Review of Current Progress in Electricity
and Its Practical Applications

Volume CXXIX

January-June, 1948

McGRAW-HILL PUBLISHING COMPANY INC.
330 West 42d Street
NEW YORK CITY

DEW

Eng. Lib.
McGraw-Hill

Engineering
Library
TK
1
.E4

Electrical World

Volume CXXIX—January-June, 1948

McGRAW-HILL PUBLISHING COMPANY, INC. • 330 West 42nd Street, New York City

SUGGESTIONS FOR USE OF INDEX

Articles in this index are arranged alphabetically according to subjects. This is not an index of titles. Each article is indexed under the general subject which the article treats. For example, if the article deals with generator testing it will be indexed under *tests*, if it treats industrial wiring it will be indexed under *wiring*, etc.

Feature length articles and major news items have been cross-referenced to facilitate location of articles without extended search.

The following material has not been indexed:

Personal items.
New equipment.
Book Reviews.
Rate Changes.
Minor Financial News.
Minor Manufacturing Market News.

Related articles have been grouped under such headings as:

Appliances—All articles dealing with ranges, water heaters, ironers, etc., are indexed under appliances, rather than under the type of appliance discussed.

Associations, Societies and Governmental Agencies—Major News items and articles relating to this group are indexed under the individual organization name.

Court Decisions and Suits—Major items are indexed under the name of the company involved.

Public Utilities—Articles dealing with individual power companies, and with their related activities, are indexed alphabetically under the company name and *not*, as formerly, under the heading Public Utilities.

Rural Electrification—All articles dealing with various phases of supplying service to rural areas are indexed under this subject head.

Statistics—All articles dealing with any type of statistics are indexed under Statistics, regardless of the general subject class that the article falls under.

Steam Stations and Developments, Hydro Plants and Developments—Articles about generating stations are listed under one or the other of these heads, according to the type of station.

Following the main index is an index of authors of signed articles. In this index the exact title is listed.

GENERAL ALPHABETICAL INDEX

A

Accounting:
Numbered diagrams simplify accounting procedure, Feb. 14 ..... *108
Reclamation accounting criticised; pressure to oust Straus grows (N) Mar. 20 5

Advertising:
Electric kitchen takes to the road, Mar. 13 ..... *102
Power company advertising. H. S. Metcalfe, May 8 90
PUAA announces 1948 better copy awards (N) June 5 84
Southern Bell Telephone & Telegraph Co. advertising limited by Georgia Commission (N) Apr. 3 12
Why electric cooking needs industry promotion. J. F. Burt, Mar. 27 ..... *94
Why we push the "go all-electric" program. R. A. Gallagher, Mar. 27 *88
Alabama Power Co. (N) May 15 19
Ordered to reduce rates to cities and coops (N) Apr. 10 95
Aluminum Co.—generator contracts awarded (N) June 12 6
American Gas & Electric—expansion program may extend past five years (N) May 22 101
Philip Sporn station boilers made for best heat rate (N) Mar. 13 95
Will buy Citizens Heat, Light & Power Co. (N) May 29 12
American Institute of Electrical Engineers—Meter committee meets with E.E.I. (N) Feb. 21 6
Northeastern District meeting (N) May 8 73
Pittsburgh meeting (N) Feb. 7 ..... *11
Report of convention, Feb. 14 ..... *88
American Power & Light—Financial statement (N) Apr. 24 66
American Public Power Assn. meeting (N) May 22 96
American Society of Engineering Education meeting (N) June 26 12
Appalachian Electric Power (N) Jan. 10 6

Appliances:
Bureau of Labor Statistics allows 1,200 kwhr in "city workers budget" (N) Jan. 3 25
Electric cooking needs industry promotion. J. F. Burt, Mar. 27 ..... *94
Electric kitchen takes to the road, Mar. 13 ..... *102
Farm kitchen demonstrated at Eastern State Exposition, June 5 ..... *134
G.E. appliance prices cut (N) Jan. 3 22
Hawaii—Aloha to the brides, Jan. 17. 202
Hotpoint, Inc. conducts "Chef's School", June 5 134
Load analysis is necessary to meet tomorrow's requirements, May 22 .. *103-132
Production doubles in 1947 (table) Jan. 17 169
Ranges, electric, replace gas, Amherst, Mass. accelerates growth of other uses. L. W. Frank, June 19. *84
Revolt in the kitchen (Ed) Mar. 13 . 86
Water heating load . . . ready and waiting. M. M. Feaman, Mar. 27 .. *96
We make a bigger market for our appliance dealers. R. E. Gale, Mar. 27 ..... *100
Arizona Power Authority voted money to operate (N) Mar. 20 5
Arkansas Power & Light takes over Elaine Utilities (N) Jan. 3 27
Takes title to Lake Catherine power plant (N) June 12 11
To increase expansion program (N) Mar. 6 6
Arkansas Utilities Assn. meeting (N) June 26 ..... *12

Atomic Energy:
Atomic energy conversion factors. I. Rotkin, May 22 146
British pile at Harwell operating since August (N) May 1 6
Commission bites scientists (Ed) June 19 64
First atomic power will sell for what it will bring (N) Mar. 27 83
Marketing atomic power (Ed) June 5 79
What happened in atomic energy in '47?—report, Apr. 10 ..... *97-104

Atomic Energy Commission:
Appropriation pleas to be considered by Congress (N) Feb. 7 12
Appropriations voted by House (N) Apr. 10 90
Employee relations policy (N) May 8 72
Extension of terms of commission in Congress (N) June 26 4
Funds cut by the House (N) June 19 72
Funds granted in Deficiency Bill (N) May 1 19
Military seeks atomic power; bomb development instead (N) June 12 .. 6
President and Congress deadlocked (N) May 8 75
President's reappointment of AEC leaves senators floundering (N) May 1 13
Report throws light on future of atomic power (N) Feb. 7 6
What's the fighting about? (Ed) May 8 67
Australia—Victoria passes utilities anti-strike law (N) Feb. 21 6

Awards:
Eta Kappa Nu will honor 6 outstanding young American electrical engineers (N) Jan. 24 ..... *11
Lamme medal awarded to Alexander MacCutcheon (N) May 29 6
McGraw, James H.—Manufacturers Medal presented to E. O. Shreve (N) Mar. 20 13
Westinghouse Electric presents scholarships for 4-H Better Methods Electric Contest (N) Jan. 3 ..... *25

B

Bangor Hydro Electric (N) Mar. 13 95

Batteries:
Antimony discharges batteries, Jan. 17 194
Double service by a control battery, Jan. 31 62
Underground vaults house storage batteries. Booth & Holland, Mar. 13 ..... *128
Birmingham Electric—Buys what it sells in planned lighting, May 8 ..... *118
Blower, portable, saves corn, Jan. 31 .... *84
Buffalo Niagara Electric Co. is a consolidation of Niagara Hudson Systems (N) May 15 14
Business in the next war—if war comes, May 1 ..... *16

C

Cables:
Aluminum for distribution circuits used by Jackson Electric Dept. C. E. Bryan, Feb. 28 ..... *64
Cable fault interrupts service in Cleveland (N) Apr. 3 13
Concrete pullbox links transite to conduit, May 22 ..... *133
Gas cable fortifies substation, Jacksonville. Titus & Thomas, Jan. 3 ... *34
Gas test for cable joint, Apr. 24 ..... *90
How New Orleans lays submarine cable, Mar. 13 ..... *114
Installing 110-kv oil-pipe cable in old New Orleans. M. J. Cade, Feb. 28 ..... *70
Overload calculations for cable current ratings. E. W. Davis, Apr. 10. *134
Racking cable in manholes, Jan. 31 .. *68
Safeguarding joints against moisture, Jan. 17 186
Spinner lashes aerial cable in field. Lasseter & Treat, Apr. 24 ..... *69
Calculating board solves network problems, Jan. 17 ..... *175
California Electric Power (N) Mar. 20 .. 19
Cambridge Electric Light (N) June 19 .. 70

(Ed) Editorial. * Illustrated. (N) News. (D) Digest.

Canada:
Beauharnois plant to add units (N) Jan. 24 ... 6
1947 proves record year for generation (N) Mar. 6 ... 5
Northwest interconnected with B. C. Electric Railway (N) May 1 ... 12
Ontario hydro will buy power from rubber plant (N) Jan. 10 ... 19
Ontario prays for rain to end power shortage (N) Feb. 28 ... 56
Output falling (N) May 22 ... 98
Power shortage strikes Abitibi region (N) Jan. 31 ... 43
Prince Edward Isle electrification program proposed (N) Jan. 3 ... 21
Snare River equipment hauled 325 miles (N) Apr. 10 ... 93
25 to 60 cycle conversion in South Ontario likely (N) Mar. 13 ... 92
Ungava Power plans hydro plant (N) Jan. 3 ... 25
Capacitors—Series capacitors for western line, Mar. 27 ... 114
Capitan Light & Power to be purchased by New Mexico coop (N) Mar. 6 ... 6
Carbide & Carbon Chemicals Corp. to take over Clinton Laboratory (N) Jan. 10 ... 12
Central Arizona Light & Power appeals for power curtailment (N) May 1 ... 4
Central Hudson Gas & Electric settles claim against N. Y. City (N) May 22 ... 98
Central Louisiana Electric — electric kitchen takes to the road, Mar. 13 ... *102
To open outdoor station (N) June 19 ... 71
Central Power & Light adds unit (N) May 22 ... 100
Plans six-year expansion (N) Jan. 17 ... 132
Central Stations—Central station customers 1946-, 1947 (table) Jan. 17 ... 158
Electrical World's survey of electric power industry indicates increase (N) Jan. 17 ... 129
Central Vermont Public Service—Rutland, Vt. settles flood damages (N) Jan. 10 ... 11
Cincinnati Gas & Electric—"Spot the outlet" promotional game for adequate wiring (N) June 26 ... *16

Circuit Breakers:
Air-blast breakers for Swedish 380-kv line. E. Hansson, Apr. 10 ... *114
18 don'ts when working on oil circuit breakers, Mar. 27 ... 110
Fault currents estimated from curves. J. N. Banky, Mar. 13 ... *108
Measure closing currents of oil circuit breakers, Feb. 28 ... *84
Oil circuit recloser mountings and connections, Mar. 13 ... *124
Test box checks timing of oil circuit breakers, Mar. 13 ... *120
Clamps—Suspension clamp power loss tests. Alfio Bissiri, Jan. 3 ... *58
Clocks—Spinner device drains clock rotors, May 22 ... *154

Coal:
Coal situation worsens for electric companies (N) Apr. 10 ... 88
Cradle handles pulvizer balls, Jan. 31. *80
Second coal gasification experiment being planned (N) Feb. 21 ... 20
Station economics 1934-1947 (charts & tables) Jan. 17 ... 152
Truman invokes Taft Act to halt mine shutdown (N) Mar. 27 ... 78
Utilities have adequate coal stocks for present (N) Apr. 17 ... 14
Columbia Gas & Electric changes its name (N) May 22 ... 94
Columbus & Southern Ohio Edison to increase generating capacity by 52 percent (N) Feb. 7 ... 10
Commonwealth Edison franchise drafted (N) Mar. 13 ... 88
Illinois Comm. keeps control of Chicago rates under franchise (N) June 5 ... 81
Spurs financing for new franchise (N) June 19 ... 69
Voted 43-year franchise (N) May 29 ... 13
Commonwealth Edison group backs atom research in University of Chicago (N) June 26 ... 14
Commonwealth Telephone Co. ruling upheld by court (N) May 15 ... 12
Compressors—Motor driven centrifugals pump gas through converted Big Inch lines. W. H. Stueve, June 19 *66

Conductors:
Aluminum conductors used exclusively throughout Aluminum Co. rolling mill, Apr. 24 ... *81
Determining wire size by using loose change. C. C. Hoke, May 8 ... *116
Tests of conductor ties. R. E. Jones, Jan. 31 ... *78
Conduit support known as Kindorff hanger, Jan. 17 ... *194

Connectors:
Connector limitations studied. Schaffer & Knutz, Jan. 31 ... *46
Short-circuit tests predict performance of corroded connectors. Schaffer & Knutz, Feb. 14 ... *80
Wire connections need more attention. F. E. Sanford, May 8 ... *79
Consolidated Edison (N) Jan. 24, 6; (N) June 26 ... 5
Interconnection with Long Island Lighting (N) Apr. 17 ... 13
To increase capacity (N) Jan. 17 ... 133

Construction:
Construction expenditures 1933-1948 (charts & tables) Jan. 17 ... 162
New Orleans new utility service building. I. H. Purington, Apr. 10 ... *109
Northwest construction considered by 12 power corporations (N) Mar. 13 ... 89
10 Wisconsin utilities will spend millions for 1948 construction (N) Apr. 24 ... 65
Today, not tomorrow (Ed) Mar. 27 ... 76
Consumers Power plans mobile telephone system (N) Jan. 17 ... 135
Plans to add generating units (N) Jan. 17 ... 133
Contractors and electrical suppliers in Texas indicted for price fixing (N) Mar. 13 ... 90

Controls:
Applying motors and control for wide-speed range. J. W. Harper, May 22 ... *156
Mechanical computer would refine governing. T. E. Curtis, Feb. 28 ... 70
Supervisory control permits decentralization of large systems, Jan. 31 *53
Copper—Chart determines copper temperature rise. G. F. Banks, June 5 ... *116
Cork gasketing material standardized, Mar. 13 ... 130
Cradle handles pulvizer balls, Jan. 31 ... *80
Crane, portable, Jan. 17 ... *196
Current—Spokane ousting d-c current (N) June 5 ... 85
Cutter, pneumatic, for severing junk conductor. John Gibson, Mar 13 ... *132

D

Dams see Hydro electric plants and developments
Dayton Power & Light (N) Jan. 3 ... 24
Delaware Power & Light (N) Jan. 31 ... 38
To build postponed power plant (N) May 15 ... 6
Detroit Edison (N) Jan. 3, 21; Mar. 27 ... 81
Labor troubles (N) Jan. 24 ... 4
Seeks more income (N) June 26 ... 13

Distribution Systems:
Aluminum conductors used exclusively throughout Aluminum Co. rolling mill, Apr. 24 ... *81
Aluminum for distribution circuits used by Jackson Electric Dept. C. E. Bryan, Feb. 28 ... *64
Changing over from delta to wye-connected system brings metering problem, R. Lambert, Jan. 31 ... *66
Guide for service attachments at poles and buildings, Jan. 31 ... *74
Lineman's report form guides trouble analysis, Mar. 13 ... *116
Oil circuit recloser mountings and connections, Mar. 13 ... *124
Reliable, flexible, industrial power distribution systems better for the power user. H. J. Finison, Mar. 13. *97
Secondary distribution design for urban lighting. H. C. Bingham, Jan. 3 ... *54
Speed wrenches handle house bracket, etc., Jan. 31 ... *78
Doble Engineering Co.'s conference of clients (N) Feb. 14 ... 75
Drafting table tops of linoleum, May 8 ... 85
Ducts and Manholes—Precast concrete manholes speed installation time. F. J. Johnson, May 22 ... *148
Racking cable in manholes, Jan. 31 ... *68
Duke Power plans 2 plants in South Carolina (N) Apr. 10 ... 94
Duquesne Light—Exhaust steam noise quieted by silencers, Feb. 14 ... *96
To add third unit to Phillips Station (N) June 5 ... 81
Workers transfer allegiance to IBEW in NLRB vote (N) May 29 ... 11
Write-off approved (N) June 19 ... 69

E

Edison Electric Institute:
Accident Prevention Committee meeting (N) Feb. 28 ... 55
Contest winners announced (N) Apr. 17 ... 12
Convention (Ed) June 5 ... 80
Coordinated research program approved (N) Mar. 20 ... 19
Electrical Equipment Committee meetings (N) Feb. 21 ... 11
Industry job ahead (Ed) June 5 ... 77
Officers elected (N) June 12 ... 12
Preview of new electric kitchen program at sales meeting (N) Apr. 10 93
Sales meeting (N) Apr. 17 ... *11
Transmission & Distribution Committee meeting (N) Feb. 21 ... 5
Transmission and Distribution and Electrical Equipment committees meet (N) May 15 ... 11
Edison, Thomas A.—Private office and study, Feb. 7 ... *5
Egg cleaner, electric, May 8 ... *120
Electrical Equipment Representatives Assn.—First meeting and organization (N) Apr. 3 ... 11
Electrostatic spraying and infrared heat used by electrical manufacturer, Mar. 13 ... *142
Eloy Light & Power's sale to coop challenged (N) Feb. 7 ... 12

Employees:
Christoffel perjury trial (N) Feb. 28, 58; (N) Mar. 6, 6; (N) Mar. 13 ... 94
Dairyland Power Co-op case reopened by Wisconsin Supreme Court (N) June 19 ... 72
Decertification election ordered against UE unit (N) Mar. 13 ... 91
Ebasco strikers get OK to picket subcontractors (N) Feb. 14 ... 76
Electric manufacturers avoid finish fight with UE (N) Feb. 28 ... 52
Employer can denounce labor union to workers (N) June 5 ... 85
General Electric wage offer accepted: Westinghouse offer refused (N) June 19 ... 72
Indianapolis Power & Light union relationship threatened (N) Mar. 13 ... 92
International takes over IBEW at Seattle (N) Apr. 24 ... 65
Los Angeles strike (N) Feb. 21, 13; (N) Feb. 28 ... 54
Los Angeles strike ends (N) Feb. 28 ... 54
McComb clarifies rule in overtime pay case (N) June 26 ... 19
NLRB frowns on small unions formed by raiding (N) Feb. 14 ... 71
NLRB rulings interpret Taft-Hartley provisions (N) Jan. 10 ... 20
"Overtime-on-overtime" ruling jolts both management and government (N) May 8, 7; (N) June 12 ... 4
Plant guards ruled upon by NLRB, May 15 ... 12
Strike threat at Oak Ridge spurs Congress to tighten Taft-Hartley Act (N) Mar. 27 ... 79
Supervisors study union relations. L. J. Kaufman, Jan. 31 ... 56
Supreme Court avoids principles in two Taft-Hartley Act tests (N) June 26 ... 6
Taft-Hartley Act has brought many benefits, report to Congress shows (N) May 20 ... 12
Taft-Hartley Act "watch dogs" will have 5 problems for consideration (N) May 1 ... 11
Technical manpower needed—sixty-cycle curricula (Ed) Jan. 31 ... 44
Utility employment and wages 1933-1947 (charts & table) Jan. 17 ... 166
VEPCo, IBEW headed for foremen's union fight (N) Jan. 10 ... 14
Wanted—32 high school seniors. H. E. Dexter, Mar. 27 ... 106
Westinghouse advises against third pay rise (N) Apr. 10 ... 92
Wisconsin court holds public utility anti-strike law unconstitutional (N) Mar. 27 ... 83

Energy:
Energy sales 1934-1947 (charts & table) Jan. 17 ... 154
30,000 hours a minute. G. A. Price, June 5 ... *100
High kilowatthour content for frozen foods, Jan. 3 ... *70
Kilowatt-hour-output guessing contest (N) Jan. 17 ... *132
Output of energy 1933-1947 (chart & tables) Jan. 17 ... 142
Engineers—Power courses in technical schools await utility support. A. E. Knowlton, June 19 ... *77
Equipment—Providing new equipment next war's big problem (N) May 8 77
NSRB surveys power equipment production (N) June 12 ... 13
European Recovery Program, see Marshall Plan

F

Federal Power Commission:
Arizona Supreme Court blocks rate survey (N) Feb. 7 ... 19
Battle over vacancy (N) Apr. 24 ... 61
Behling nomination withdrawn (N) Mar. 27 ... 84
Buchanan confirmation held up (N) June 12 ... 5
Congress criticizes natural gas regulation (N) Feb. 28 ... 53
Opposition to Buchanan gaining (N) May 15 ... 5
Reverses trend, takes step to limit own authority (N) Jan. 31 ... 36
Revises form 12-E (N) Jan. 10 ... 11
Status quo of membership assured (N) May 8 ... 71

Finance:
Acres of stockholders—all happy. Ben-Fleming Sessel, Mar. 13 ... *111
Debt ratios and rate levels. H. L. Hooker, June 5 ... *95

(Ed) Editorial. * Illustrated. (N) News. (D) Digest.

Electric utilities' revenues rose in 1947 (N) Apr. 24 ... 62
Don't sell utility equities short (table) Mar. 13 ... 110
Finance Reclamation projects with bonds, senator advocates (N) Jan. 10 ... 6
Financial income and expenses 1937-1947 (charts & tables) Jan. 17 ... 159
A look at your earnings record. A. H. Temple, June 5 ... *103
Markets for electric utility securities. Edward Hopkinson, Jr., June 5 ... *96
Revenue from electricity sales 1934-1947 (charts & tables) Jan. 17 ... 156
See your banker twice a year (Ed) Mar. 27 ... 76
Who are our stockholders? H. S. Sutton, June 5 ... *102
Fires—How to cut fire risks in textile mills, Feb. 28 ... 79
Fire extinguishers — Emulsion-forming spray system installed to protect substation transformers of State Island Edison. J. J. Burri, June 19 ... *89
Fire-fighting instruction includes close contact with heat and smoke. W. E. Rossnagel, Feb. 28 ... *62

Floating Power:

Anchorage, Ala. buys ships for power (N) May 22 ... 101
Puerto Rico solves San Juan power problems with ship (N) June 12 ... *13
Ship supplies power at Portland, Feb. 28 ... *80
Floods—Northwest floods spread ruin (N) June 5 ... 83
Florida Power Corp.—Judge dismisses plea (N) Jan. 10 ... 12
Stockholders tour company property (N) Apr. 3 ... *4
Florida Power & Light energizes underground cable (N) Apr. 24 ... 61
Flower bulbs forced by electric service, May 8 ... *120
Frontier Power may buy Public Service Co. of New Mexico (N) May 22 ... 100
Fuel—Station economics 1934-1947 (charts & tables) Jan. 17 ... 152
Furnaces—Controlling power input to arc furnaces. Valentine & Browning, June 5 ... *120
Electric salt bath furnace handles hot-rolled plate, Feb. 28 ... *94
Fuses—Blown fuse brings wiring information. J. H. Aernam, Mar. 13 ... *136

G

Gas—Stating the problem (Ed) Jan. 31 ... 44
Gaskets—Cork gasketing material standardized, Mar. 13 ... 130
Superheater uses emergency gaskets, Mar. 13 ... 134
General Electric—Appliance prices cut (N) Jan. 3, 22; (N) Apr. 24 ... 64

Generating Capacity:

Changes in capacity reported to FPC. Feb. 7, 20; Feb. 21, 20; Mar. 6, 12; May 8, 72; May 29, 6; June 12 ... 6
Generating capacity 1933-1947 (chart & tables) Jan. 17 ... 144
New capacity added to generating stations in 1947 and to be added in 1948 and 1949 (charts & tables) Jan. 17, 146; correction Jan. 24 ... 6
Number and installed capacity of electric utility generating plants by states and type of prime mover as of Nov. 1, 1947 (table) Jan. 17 ... 150
Private utilities in Northwest may and more power plants (N) Feb. 7 ... 4
Station economics 1934-1947 (charts & tables) Jan. 17 ... 152
Utilities in the U. S. having generating capacity other than 60 cycles (table) Feb. 14 ... 100

Generators:

For safer testing of generator leads, May 8 ... 110
Generator laminations reinsulated in the field. F. R. Gould, Jan. 17 ... *171
Gorge power plant's generator stator takes a ride, May 22 ... *134
Life of windings on rotating machines. A. F. Ayres, pt. 1, May 22, 152; pt. 2, June 5, *123; pt. 3 June 19 ... 106
Voltage regulating unit built into generator. R. L. Gomon, Apr. 24 ... *90
Georgia Power pleads for end of discount for prompt payment of electric bills (N) Mar. 27 ... 79
Germany—Berlin to get plant (N) May 8 ... 70
Government ownership—It's time to start fighting. C. E. Oakes, June 5 ... *89
Joining the issue at last (Ed) Mar. 13 ... 86
Great Britain—Pile at Harwell operating (N) Jan. 3, 22; (N) May 1 ... 6

Grounding:

Comparative properties of grounding electrodes. Reinhold Rudenberg, Jan. 31 ... *72
How to make earth resistance tests at substations, May 8 ... *102
Six variables in ground resistance studied for 18 years. C. B. Downer, Jan. 3 ... *37
Two anchors in tandem give extra holding power. John Gibson, Feb. 14 ... *100
Gulf Public Service (N) Jan. 3 ... 24
Granted franchise (N) May 15 ... 12
Gulf States Utilities voted franchise (N) June 19 ... 70

H

Hartford Electric Light breaks ground for South Meadows addition (N) May 22 ... *95
Hawaii—Aloha to the brides, Jan. 17 ... 202
Heat pumps—Operation data for heat pump, Feb. 14 ... 118
Southern Research Institute continues study (N) Feb. 21 ... 14

Heating—Electric:

Coal-drying survey made (N) Jan. 24 ... 19
Cutting fire hazards around induction heaters, Feb. 28 ... 86
Floating heater de-ices watering trough, Apr. 10 ... *148
High frequency heating aids rubber industry. Carey Mann, May 8 ... 120
House heating cheaper with electric room units (N) May 1 ... 11
Infrared oven unit triples production at Yale & Towne, Jan. 17 ... *198
Induction hardening reduces cost of blades, Mar. 27 ... *132
Infrared heat and electrostatic spraying used by electrical manufacturer, Mar. 13 ... *142
Infrared lamps save laundry investment, Apr. 10 ... *144
Pipe thawing needs electrically continuous circuit, Apr. 24 ... 106
Pitch melting pots speed lens production. D. W. White, Feb. 28 ... *96
Potato preparation aided by electricity. P. P. De Moya, Jan. 17 ... *198
Radiant heating makes strides in Norway. Hakon Kinck, Apr. 24 ... *73
Snow melting for sidewalks. M. F. Muzzillo, Apr. 10 ... *124
Heating—electric see also Radiant heating

Hydro Electric Plants and Developments:

Allatoona Dam penstocks (N) Jan. 3 ... *23
American Committee of International Commission on Large Dams members (N) Mar. 6 ... 12
Appropriation for power projects (N) Mar. 6, 5; (N) May 1 ... 4
Ariel plant renamed Merwin (N) May 15 ... 19
Arkansas reclamation projects delayed by Senate (N) Apr. 24 ... 61
Bonneville Power Administration plans for future (N) Feb. 14 ... 72
Bonneville Power Administration sustains loss in floods (N) June 26 ... 13
Bonneville Power agrees to intertie with Pacific Power & Light (N) Apr. 10 ... 93
Buchanan Lake to be pumped over the dam twice (N) Feb. 28 ... 54
Buggs Island contract let (N) Mar. 13, 93; (N) May 8 ... 73
California drought brings compulsory rationing threat (N) Feb. 28 ... 54
Central Arizona project given U. S. Bureau of Reclamation okay (N) Feb. 14 ... 74
Central Maine Power's Jackson plant housed in quonset hut (N) Mar. 6 ... *5
Central Valley Project plans Delta steam plant (N) Feb. 14 ... 73
Central Valley Project control by Army suggested (N) Apr. 3 ... 4
Central Valley Project power sales (N) Feb. 7 ... 14
Columbia floods bring warning of shortage (N) June 19 ... *71
Columbia River floods curtail output of hydro plants (N) June 12 ... *5
Congressional adjournment rush funnels funds to all federal power systems (N) June 19 ... 66
Davis Dam won't supply power everybody wants (N) Jan. 31 ... 37
Fishing association wants no more dams in Northwest (N) Jan. 31 ... 39
Folsom Dam to be controlled by Bureau of Reclamation (N) Jan. 24 ... 5
Ft. Peck power project revenues for 1947 (N) Apr. 24 ... 62
Furman Shoals project to be built by Georgia Power (N) May 29 ... 12
Garrison Dam to be erected on land bought from North Dakota Indians (N) May 29 ... *5
Gorge hydro project to be developed (N) May 22 ... 96
Grand Coulee breakers of 10,000,000-kva ordered (N) May 8 ... *75
Grand Coulee Dam's generator assembling (N) Feb. 21 ... *16
Grand River Authority buys Oklahoma plant (N) Apr. 24 ... 63
Hoover Dam output taxed by Nevada county (N) June 12 ... 13
Hoover Dam power application made by Arizona (N) Mar. 13 ... 93
Hoover Dam silt conditions studied (N) Apr. 10 ... 89
How reclamation pays survey released by U. S. Bureau (N) Jan. 24 ... 5
Hungry Horse contract awarded (N) May 1 ... 5
Hungry Horse Dam gets power over BPA line (N) Apr. 17 ... 12
Hydraulic model aids plant design. J. R. James, Mar. 27 ... *105
Iowa Hydro coop granted Cedar River project license (N) Jan. 3 ... *26
Iowa's move to stop coop fails on FPC technicality (N) Feb. 14 ... 76
Iowa renews fight to bar co-op project on Cedar River (N) Jan. 31 ... 42
Kings River, Calif., hydro developments by Pacific Gas & Electric opposed by Bureau of Reclamation (N) Feb. 7, 13; (N) Feb. 21 ... 13
Kings River, Calif. hydro proposed (N) Apr. 10 ... 94
Kings River sites desired by Los Angeles (N) June 5 ... 85
Legislation before Congress threat to station of FPC hydro licenses (N) Mar. 27 ... 81
Maintenance expenditures 1939-1946 (tables) Jan. 17 ... 151
National Security Resources Board pledged with non-support (N) June 19 ... 69
New York Power & Light to apply for license for Stewarts Bridge project (N) Feb. 28 ... 54
Pine Flat Dam, Calif. started (N) Apr. 10 ... 94
Pumped storage hydro costs per kw are competitive. Dr. N. N. Wolf, May 8 ... *83
Revenue bonds to finance federal hydro projects suggested (N) May 22 ... 96
Runner size of hydraulic turbine, May 22 ... *142
St. Lawrence bill loses in Senate (N) Jan. 24, 12; (N) Mar. 6 ... 4
St. Lawrence plan for power only offered by Dewey (N) May 8 ... 76
Savannah River Electric gives up Clark Hill fight (N) May 29 ... 12
Savannah River Power will pursue Clark Hill fight (N) June 19 ... 71
Seattle to replace dam at Gorge plant on Skagit (N) May 1 ... 5
Selection of hydraulic turbine for given head and capacity (chart) May 8 ... 108
Shasta Dam power controversy with Pacific Gas & Electric (N) Mar. 13, 88; (N) Apr. 3, 5; (N) Apr. 10 ... 92
Shasta Dam power to be increased (N) Feb. 28 ... 58
Shasta water wasted as snow melts (N) Apr. 24 ... 60
Snake River project, Idaho, receives license (N) Apr. 3 ... 5
Southern California Edison resurfaces scored journal bearing on the job. H. A. Noble, Jan. 3 ... *46
TVA appropriation bill passed without New Johnsonville steam plant (N) June 26 ... 5
TVA director Morgan succeeded by Curtis (N) May 8 ... 76
TVA's fight to get New Johnsonville steam plant, Tenn. (N) Jan. 24, 11; (N) Feb. 7, 5; (N) Feb. 14, 78; (Ed) Mar. 27, 75; (N) May 8, 70; (N) May 15, 4; (N) May 29 ... 12
TVA increases use of steam for generation in fiscal 1947 (N) Jan. 10 ... 13
TVA plan would break tie that binds federal power systems to rivers, Mar. 20 ... *16
Pres. Truman's 1949 budget allots nearly 50% more for power (N) Jan. 17 ... 128
U. S. Bureau of Reclamation increases power project plans (N) Feb. 14 ... 73
U. S. Bureau of Reclamation restricted by Rockwell Bill (N) Jan. 31 ... 40
Utilities' stake in soil conservation. H. H. Bennett, June 5 ... *91
Veto of Interior Bill possible (N) June 26 ... 4

I

Idaho Power—we make a bigger market for our appliance dealers. R. E. Gale, Mar. 27 ... *100
Illinois Power buys Patoka property (N) Feb. 28 ... 68
Indiana & Michigan Electric Co. (N) May 22 ... 95
Indianapolis Power & Light—union election (N) May 15 ... 6
Industrial Power Sales Conference—Three-point plan for raising industrial electrification at GE meeting (N) June 19 ... *68
Industrial service—Industrial and commercial loads, May 22 ... *118
Power usage by American industry high but can be expanded (N) Apr. 10 ... 91
Three-point plan for raising industrial electrification set up at GE meeting (N) June 19 ... *68
Industrialization and cheap power (Ed) Mar. 13 ... 86

(Ed) Editorial. * Illustrated. (N) News. (D) Digest.

Insulation:
Insulation properties of Buna S and natural rubber. E. W. Davis, Mar. 27 ....*118
Insulation test on oil circuit breaker transformers, Jan. 3.... 46
Life of windings on rotating machines A. F. Ayres pt. 1, May 22, 152; pt. 2, June 5 *123; pt. 3, June 19 106
Properties of Buna S insulation for wires and cables. E. W. Davis, Mar. 13 ....*122

Insulators:
Angle pole construction for 11-kv and 22-kv lines, Apr. 24.... *92
Cold-collar test of high-voltage bushing, Apr. 24....*102
Guy and strain insulator arrangements for urban line construction, Feb. 14 ....*106
Life of windings on rotating machines. A. F. Ayres, pt. 1, May 22, 152; pt. 2, June 5....*123
Tests of conductor ties. R. E. Jones, Jan. 31 .... *78
Interconnections — Five company power pool interconnects four states (N) June 26 13
Northwest interconnected with B. C. Electric Railway (N) May 1.... 12
Texas systems authorized to interconnect (N) May 1.... 14
Interstate Power finance problems eased (N) Jan. 3.... 26
Granted three franchises (N) Mar. 13 92
Interlex reservation demonstrated to public (N) May 29.... *11

J

Japan—Deconcentration Review Board (N) May 15.... 19

K

Kansas City Power & Light has underway 3-year program (N) Jan. 3.... 23
Loss of generator field disrupts plant operations (N) Mar. 20.... 6
Plans emergency curtailment (N) June 19 69
Kansas Gas & Electric—Complete relighting sold to schools. Carl Liebig, Apr. 24.... *79
Kellems, Vivien—U. S. acts to collect back taxes (N) May 22.... 95
U. S. gets tax money (N) May 29.... 19
Kennecott Copper power station near completion (N) Feb. 14.... 75
To rebuild refinery (N) May 1.... 6
Kentucky Utilities sell water properties (N) Jan. 17.... 132
Kilowatt-hour-output guessing contest. Nitzberg's nifty number nips Nostradami (N) Jan. 17....*132
Korea—Power to American area shut off by the reds (N) June 5.... 86

L

Legislation:
No changes this year in federal utility regulations; gas bill shelved (N) May 22 94
Review utility laws and remove discriminations (Ed) May 8.... 68
Taft-Hartley Act "watch dogs" will have 5 problems for consideration (N) May 1.... 11
Lightning—Baltimore utility makes study of lightning for 17 years. G. W. Maihl (charts) Apr. 10....*105

Lights and Lighting:
Ball cage lighting at Williams College. R. A. Potter, June 19....*114
Better Light-Better Sight Bureau aims drive at grade rooms (N) June 12. 11
Birmingham Electric buys what it sells in planned lighting, May 8....*118
Brownout in Arizona is eased as power increases (N) June 5.... 86
Brownout in California ordered to hoard water (N) Mar. 6.... 4
Brownout in Wyoming to conserve coal (N) Apr. 3.... 19
Buffalo plant lighting solved by louvers and bowls. H. W. Sharp, Apr. 10 ....*108
California on daylight saving time (N) Mar. 13, 93; (N) Apr. 17.... 12
Chicago orders lights (N) Feb. 21.... 11
Coefficients of utilization for reflector and projector lamps (table) Jan. 17 180
Cold cathode makes impressive design, Apr. 24....*110
Daylight saving time to conserve power in California (N) Mar. 13.. 93
Dimout order legalized by Wisconsin PSC (N) Jan. 5.... 23
Factory yard lighting, Feb. 14....*112
Fluorescent lamp starters operating principles. E. Newhall, June 5....*112
Fluorescent lighting at Mutual Benefit Life Insurance Co. expands seven times in seven years, Jan. 3.... *70
Fluorescent lighting on 34-ft. ceiling of California capitol building successful, June 5....*128
Hartford museum has glareless lighting, Jan. 31.... *82
High intensity from a high ceiling, Jan. 31 .... *84
Higher mounting reduces vandalism. C. E. Waldron, Jan. 3.... *72
Jewelry store lighting avoids reflections in show-glass windows, Mar. 27 ....*130
Largest integrating sphere in the world tests lighting fixtures in National Bureau of Standards (N) June 26 .... *6
Lighting through a "Polaply" ceiling (N) Feb. 14.... *71
Load analysis is necessary to meet tomorrow's requirements, May 22.. *103-132
Mercury-arc lamp with luminaire allows greater utilization of light. D. W. Rowten, Apr. 10....*112
Mercury lighting for $9.50 per month, Medford, Ore., Apr. 10....*146
Mercury-vapor replaces magnetite arcs in Spokane, June 5....*130
Naval Air Station, Moffet Field, Calif. saves with 480-volt series lighting. O. A. Rands, Jan. 3.... *33
Neon-lighted mural, San Diego, Calif. (N) Feb. 14.... *70
New product introduced to reduce reflected glare (N) Jan. 31.... 43
Ohio motor manufacturing plant lighted by high and low-bay mercury and incandescent units June 19....*112
Overall ceiling lighting June 19....*114
Pigs fattened by overtime lighting. W. J. Davis, Mar. 15.... 140
Pittsburgh, Pa. holds Planned Lighting Exposition (N) Mar. 13.... 91
Pittsburg, Kansas, schools sold relighting. Carl Liebig, Apr. 24.... *79
Planned lighting does build profit load. G. H. Maize, Mar. 27.... *98
Potentialities of modern white-way lighting. A. F. Dickerson, Mar. 13. 138
Reno's bright lights give way to gasoline lanterns due to power shortage (N) Apr. 3.... 6
School lighting sold by conference. C. D. Hollister, Feb. 4.... 122
Seattle voters approve bonds for street lights (N) Mar. 20.... 12
Secondary distribution design. H. C. Bingham, Jan. 3.... *54
Sports and recreational area lighting recommendations. D. W. Rowton, May 8 106
Store lighting to 1-3-5-10 formula, Feb. 14 .... *85
Street lighting in Spokane business area modernized with mercury-vapor lamps Albert Gruber June 19 *98
Travelers Insurance tower beacon relighted, June 5....*107
Utility store shows own lighting exhibit, Mar. 13....*136

Load Building:
Customers vs. population, May....*110
Electric ranges replace gas, Amherst, Mass., accelerates growth of other uses. L. W. Frank, June 19.... *84
Industrial and commercial loads, May 22 ....*118
Load analysis is necessary to meet tomorrow's requirements, May 22.. *103-132
Load development planning based on diversity, May 22....*121
Load research findings help to foresee future conditions. Constantine Bary, May 22....*127
Load research methods, May 22....*123
Long-range load building via schools, Jan. 3 72
Planned lighting does build profit load. G. H. Maize, Mar. 27.... *98
Residential loads—Old and new, May 22 ....*114
Selective selling is needed now. G. E. Whitwell, June 5.... *92
Start now to build load . . . tomorrow may be too late, Mar. 27....*87-102
Trends in sales and revenue proportions, May 22....*106
Unit sales up—unit revenue down, May 22 ....*104
Utility income: class vs. mass? (Ed) Mar. 13 85
Water heating load . . . ready and waiting. M. M. Feaman, Mar. 27.. *96
We make a bigger market for our appliance dealers. R. E. Gale, Mar. 27 ....*100
Why electric cooking needs industry promotion. J. F. Burt, Mar. 27.... *94
Why and how of an adequate wiring program. M. R. Norton, Mar. 27.. *92
Why we push the "go all-electric" program. R. A. Gallagher, Mar. 27 *88
Locomotives—Locomotive gas turbine being tested (N) Apr. 3.... *13
U. S. Navy orders removal of mobile plant from water-short Arizona (N) Apr. 3 13
Louisiana Power & Light (N) Feb. 21.... 20
Lubrication—Silicone oils designed for high temperature use, Jan. 17.... 174

M

Management—Supervisors study union relations. L. J. Kaufman, Jan. 31.... 56
Manholes see Ducts and Manholes

Manufacturing:
Big electric manufacturers avoid finish fight with UE (N) Feb. 28.... 52
Electrical manufacturing industry 1937-1947 (charts & tables) Jan. 17 168
Ten electrical manufacturers indicted for price fixing (N) Jan. 17.... 130
Voluntary Programs give allocation assistance to electrical manufacturers (N) Jan. 3.... 20
Marshall Plan—Demands must not slow U. S. power expansion plans (N) Jan. 31 37
Electric power requirements—national program (tables) May 1.... 6
Materials—Allocation of scarce industrial materials is just talk (N) May 22.. 95
Materials Allocation Law dodged by manufacturers (N) Apr. 3.... 12
Materials Handling — Improved materials handling cuts crew dead time. C. L. Richey, June 19 .... *80
McGraw, James H., 1860-1948 (Ed) Feb. 28 51

Meters and Measuring:
The case for the thermal meter. A. J. Petzinger, June 19 .... *82
Changing over from delta to a wye-connected system brings metering problem. R. Lambert, Jan. 31.... *66
Dynamometer, high precision, for testing motors. J. E. Duff, June 19.... *96
Insulation tester for watthour meter, Apr. 10 ....*142
Meter committee of E.E.I. and A.I.E.E. meets (N) Feb. 21.... 6
New design of watthour meter has magnetic suspension. I. F. Kinnard, June 5 ....*104
New GE watthour meter has magnet, no jewels (N) May 29.... 6
Philadelphia meter practice in pictures. Nelson Yeakel, Jan. 31.... *58
Portable meter and relay test set. G. W. Parker, Jan. 3.... *66
Semi-portable calculator solves network problems, Jan. 17....*175
Shock mounts protect meters during transit. E. B. Kipp, Feb. 28.... *86
Supply of meter jewels reported improved (N) June 5.... 85
Voltage limiter for magnetic oscillographs. C. J. Tirk, Apr. 10....*136
Watthour meter accuracy can be preserved despite surge currents. E. L. Keller, Feb. 28.... *67
Wood frame makes shallow meter box deeper, Mar. 27....*114
Mexico—Two new plants will end power shortage (N) Jan. 17.... 136
Use of concrete poles in Mexico. Julio Colon, Mar. 13....*106
Microwave test tower (N) May 29.... *14
Middle South Development Program (N) Apr. 10 89
Midwest Power Conference at Chicago (N) Apr. 10, 91; (N) Apr. 17.... 5
Mississippi Power & Light (N) Feb. 25.. 59
Rex Brown station (N) June 19.... *66
Voted franchise (N) Jan. 3.... 26
Missouri Edison not to be bought by coops (N) Jan. 3.... 27
Voted two franchises (N) Jan. 31.... 41
Missouri Valley Electric Assn.—Engineering Conference (N) Apr. 17.... *6
Models—Hydraulic model aids plant design. J. R. James, Mar. 27....*105
Moffat, Lester E. editor of Electrical Merchandising, dies (N) Apr. 3.... 6
Montana Power to install second Kerr unit (N) Feb. 14.... 76

Motors:
Applying motors and control for wide-speed range. J. W. Harper, May 22.*136
D-c motor runs screw driver. G. N. Burkhart, Jan. 31.... 62
Hay curing by motors and blowers, Feb. 28 .... *97
Motor and blower for silo tested. Hall & Cook, Mar. 27....*130
Motor driven centrifugals pump gas through converted Big Inch lines. W. H. Stueve, June 19 .... *86
Motor location factor in heavy service, Feb. 14 97
What is your motor IQ? A. D. Robertson, May 8.... *91

Municipal Ownership:
Bryan, Tex. to build new plant (N) Feb. 14 71
Court backs San Antonio as Comal plant owner (N) May 29.... 5
Decatur, Ind. to add unit (N) May 15 13
Dyersburg, Tenn. plant destroyed by fire (N) May 15.... 12
Henderson, Ind. increased rates spurned by manufacturers (N) Feb. 28 55
Henderson, Ky. will no longer offer free light (N) Jan. 10.... 20
Jacksonville, Fla. buys line (N) Mar.

(Ed) Editorial. * Illustrated. (N) News. (D) Digest.

27 ... 81
Jonesboro, Ark. wants plant profits (N) Jan. 3 ... 24
Los Angeles Power will help irrigation district (N) Feb. 21 ... 19
Los Angeles strike ends (N) Feb. 21, 13; (N) Feb. 28 ... 54
Tallahassee, Fla. to build municipal power plant (N) Mar. 27 ... 80
Trinidad, Colo. and Springer, N. M. vote "municipal" (N) Feb. 21 ... 12

N

National Assn. of Electric Companies—Tax reform urged at meeting (N) Apr. 24 ... 60
National defense—Electric power and our national defense. W. L. Cisler, Feb. 14 ... 86
National Electrical Code—National Fire Protection Assn. forms electrical section to handle code (N) May 22 ... 94
National Electrical Manufacturers Assn.—Motor pioneers feted forty years after organizing (N) June 5 ... 82
National Electrical Wholesalers Assn.—Buffalo convention (N) May 15 ... 14
National Fire Protection Assn.—Electrical section formed to handle code (N) May 22 ... 94
National Rural Electric Cooperative Assn.—Convention (N) Mar. 20 ... *11
Meeting urges resolutions directing Congress (N) Mar. 27 ... 85
National Security Resources Board—Falck now power consultant (N) Mar. 27. 78
Power and Utilities Section maps out preliminary program (N) Apr. 10 .. 88
Surveys power equipment production (N) June 12 ... 13

Natural Gas:
Arizona utilities will get ample gas supply (N) Jan. 31 ... 41
Central Arizona Light & Power gets gas (N) Mar. 13 ... 94
Gas bill shelved (N) Feb. 28, 53; (N) May 22 ... 94
Gas engines replacing motors for irrigation pumping use (N) May 22 ... *99
Motor driven centrifugals pump gas through converted Big Inch lines. W. H. Stueve, June 19 ... *86
Networks—Fault currents estimated from curves. J. N. Banky, Mar. 13 ... *108
New Bedford Gas & Edison Light (N) June 19 ... 70
New England Meter Engineers will offer meter courses (N) Mar. 13 ... 93
New Jersey Utilities Assn. meeting (N) May 22 ... 95
New Orleans Public Service—New utility service building. I. H. Purington, Apr. 10 ... *109
New York Power and Light—Pictures tell the company's story. R. M. Angell, May 8 ... *87
Niagara Hudson System to be known as Buffalo Niagara Electric (N) May 15 ... 14
North American Co. will stay in public utility field (N) May 1 ... 13
Northwest Electric Light & Power Assn.—Accounting and Business Practice Section meeting (N) June 5 ... 83
Business Development Section (N) May 22 ... 97
Conference (N) May 1 ... 12
Engineering Section meeting (N) Apr. 24 ... 63
Research advisory service moves to Portland (N) Mar. 20 ... 6
Norway—Radiant heating makes strides in Norway. Hakon Kinck, Apr. 24 .. *73

O

Ohio Edison—Toronto plant work proceeds (N) Jan. 3 ... *22
Ohio Power Co.—Strike at Tidd plant (N) Apr. 17, 19; (N) Apr. 24 ... 66
Ohio Public Service (N) May 15 ... 5
Oil—Fuel oil trend (Ed) Jan. 3 ... 29
Oklahoma Gas & Electric will install gas turbine (N) Apr. 17 ... 12
Oklahoma Utilities Assn. convention (N) Mar. 20 ... 6

P

Pacific Coast Electrical Assn. meeting (N) June 26 ... *11
Pacific Gas & Electric (N) Jan. 17 ... 133
Disagreement with Bureau of Reclamation (N) Mar. 13, 88; (N) Apr. 10 92
Hits reclamation must-wheel power plan (N) May 22 ... 98
Makes power savings (N) Mar. 27 ... 82
Pleads for power conservation (N) Feb. 14 ... 70
Story of the power brownout (Ed.) June 19 ... 64
To send power to Nevada (N) Jan. 31 41
U. S. acts to force company to serve federal agencies at exchange rate (N) May 8 ... 73
Pacific Power & Light (N) Mar. 13 ... 89
Granted franchise (N) June 12 ... 4
Taken over by Clark PUD (N) Mar. 6 4
Will intertie with BPA (N) Apr. 10 .. 93
Patents—Supreme Court decision strikes blow at price fixing under patent licenses (N) Mar. 13 ... 89
Pennsylvania Electric sells gas companies (N) Jan. 10 ... 13
Pennsylvania Electric Association—Electrical Equipment Committee meets (N) Feb. 28 ... 57
Electrical Equipment Committee studies lighting of power station (N) May 8 ... *74
Meeting (N) June 12, 14; (N) June 19 67
System Operations Committee meeting (N) Feb. 28, *56; (N) May 22 .. 97
Transmission and Distribution Committee meeting discusses trees (N) Mar. 6 ... 13
Pennsylvania Power & Light to take over Palmerton Co. (N) May 15 ... 6
Philippine Is.—Five year hydro program (N) Mar. 13 ... 91
Pipe bender made from scrap, Apr. 24 .. *104
Pipe thawing needs electrically continuous circuit, Apr. 24 ... 106
Plastics—High frequency discharge tests plastic lining leaks. B. W. Whitehurst, Jan. 3 ... 48
Relay curve templates made from plastics, Jan. 5 ... *62

Poles:
Capped pole supports transmission tower. A. Bissiri, Mar. 27 ... *122
Mechanical loading of wood poles. E. M. Adkins, Feb. 28 ... *90
Metal caisson to hold poles in rocky soil, Feb. 28 ... *80
Pole framing for rural lines 7.2/12.5 Y kv single phase, Mar. 27 ... *120
Storage racks simplify pole handling. C. L. Richey, May 8 ... *110
Transmission line structures designed to utilize full pole strength. Borchers & Cofer, May 8 ... *92
Treat pole tops for $1.08. W. L. Montgomery, June 19 ... *92
Use of concrete poles in Mexico. Julio Colon, Mar. 13 ... *106
Portland Electric Power gives way to successor (N) Mar. 6 ... 14
Reorganization brings claims (N) Jan. 17 ... 130
Portland General Electric (N) May 15, 14; (N) June 19 ... 75
Posts—Post-repair rests ward off failures, Feb. 28 ... 94
Potato preparation aided by electricity. P. P. De Moya, Jan. 17 ... *198
Potomac Edison Co. to build plant (N) Feb. 28 ... 57
Potomac Electric allowed return of 5½% on investment (N) Mar. 13 ... 88
Power Sales—Selective selling is needed now. G. Whitwell, June 5 ... *92

Power Supply:
All power restrictions in California (N) May 22 ... 98
Arizona's brownout eased as power increases (N) June 5 ... 86
California adjusts to power rationing (N) Mar. 27 ... 82
California Commission appoints state administrator to ration power (N) Mar. 20 ... 13
California's drought lessened by rain (N) Apr. 10 ... 92
California ends rationing; daylight saving retained (N) Apr. 17 ... 12
California on daylight saving time, industrial and farm power curtailed (N) Mar. 13 ... 93
California orders brownout in north and central areas to hoard water (N) Mar. 6 ... 4
EEI survey shows record peak demands met (N) Jan. 3 ... 21
Electric power and our national defense. W. L. Cisler, Feb. 14 ... 86
Mark Eldredge assumes supervision of military supply problems (N) Mar. 6 ... 11
Private utilities in Northwest may add more power plants (N) Feb. 7 ... 4
Reno's power shortage (N) Apr. 3 ... 6
Southwest drought brings emergency in California's power supply (N) Feb. 14 ... 70
Tight power supply will continue; Northwest critical, NSRB reports (N) May 29 ... 4
Wisconsin PSC approves stand-by dimout order (N) Jan. 3 ... 23
Wyoming has brownout to conserve coal (N) Apr. 3 ... 19
Prices—Seattle contractors face Anti-Trust Act charges (N) Jan. 31 ... 39

Public Relations:
Acres of stockholders—all happy. Ben-Fleming Sessel, Mar. 13 ... *111
Brockton Edison describes its position in the community (Ed) Feb. 14 ... 79
Florida Power stockholders tour company property (N) Apr. 3 ... *4
The future . . . a challenge. J. B. Thomas, June 5 ... *98
Pictures tell the company's story. R. M. Angell, May 8 ... *87
The utility and the community. A. C. Spurr, June 5 ... *99
Washington Water Power Co. seeks "better service" through service. Kimball Jack, Feb. 14 ... *84
Public Service Electric & Gas places in service Bergen switching station (N) Jan. 10 ... *12
Sewaren station (N) Mar. 13 ... 89
Public Service Electric & Gas of Newark (N) Jan. 24 ... 5

Public Utilities:
Arizona's Supreme Court voids utility condemnation law (N) Mar. 13 .. 92
It's time to start fighting. C. E. Oakes, June 5 ... *89
Law as it should be wrote (Ed) Jan. 31 ... 45
"Nobly gain or meanly lose" (Ed) Apr. 24 ... 57
Revolutions and road blocks. C. H. Lang, June 5 ... *97
Sleet-storm batters utilities (N) Jan. 10 ... *4
Public Utilities Advertising Assn.—Cleveland convention (N) June 5 ... 84

Public Utility Districts:
Mason County PUD takes over system owned by Puget Sound Power & Light (N) June 12 ... 14
Pend Oreille PUD now operating (N) Feb. 28 ... 58
Puget Sound Power & Light sells Cowlitz County System (N) May 15 6
Puerto Rico—Floating power plant solves San Juan problems (N) June 12 .. *13
Puget Sound Power & Light crews back after strike (N) Jan. 24 ... 13
Purchase by PUD—Washington judge held blameless (N) Feb. 14 ... 77
Sells Cowlitz County System (N) May 15 ... 6
Taken over by PUD (N) June 12 ... 14
Workers end slowdown (N) Mar. 6, 19; (N) Mar. 27 ... 82
Pumps—Electrically pumped rain increases crops, Jan. 31 ... 52
Gas engines replacing motors for irrigation pumping use (N) May 22 .. *99

R

Radiant heating—Low-voltage, high current radiant house heating, Jan. 3. *39
Radio—Time announcements by radio station WWV, Apr. 10 ... *132
Radio Communication—Two-way radio simplifies sagging-in procedure transmission lines, Jan. 31 ... *60
Two-way FM radio speeds utility operations, Jan. 17 ... *186
Railroads—Electrification—Coming: railroad electrification? (Ed) Mar. 27 .. 76
Railway power plants—Navy agrees to leave power train in Arizona (N) Apr. 17 ... 19
Rain making supported by Arizona utilities (N) Apr. 3 ... 5

Rates:
Arkansas-Missouri Power Co. asks PSC to revise order fixing rates (N) Mar. 27 ... 80
Deland City Commission, St. Augustine, restrained from rate cut (N) Mar. 6 ... 12
Debt ratios and rate levels. H. L. Hooker, June 5 ... *93
Even if coal prices don't rise utilities may need rate raises to get capital (N) Apr. 3 ... 4
Illinois Commission keeps control of Chicago rates under franchise (N) June 5 ... 81
Minnesota Power & Light rate increase suspended (N) June 19 ... 72
New York State—Sauce for the ratepayer (Ed) Jan. 3 ... 28
Puget Sound Power & Light forbidden municipal house heating rates (N) Feb. 14 ... 73
Rising fuel costs stop downward rate trend (N) June 12 ... 12
Sound rate design in tomorrow's economy. E. N. Strait, June 5 ... *101
Staten Island Edison Corp. wins rate fight (N) June 12 ... 12
TVA's wholesale rate provides revenues to cover all costs (A) Apr. 3 6
Wisconsin's Public Service Commission rate order loses in Supreme Court (N) May 22 ... 96
Reddy Kilowatt chained to taxes (N) Apr 3 ... *5
Refrigeration—High kilowatthour content for frozen foods, Jan. 3 ... *72
Regulation—Wisconsin Commission appeals Two Rivers phone case (N) Jan. 10 20

Relays:
Is backup protection always necessary? W. L. Ridenhour, Mar. 13 .. *104
Is your relay test program realistic? F. S. Fehr, May 8 ... *88
Relay curve templates made from plastics, Jan. 3 ... *62
Research—Load research findings help to foresee future conditions. Constantine Bary, May 22 ... *127
Load research methods, May 22 ... *123
Resuscitation—Pole top resuscitation, Jan. 3 ... *52

(Ed) Editorial. * Illustrated. (N) News. (D) Digest.

Rheostats—Contact liquid rheostat uses stationary electrodes. Montgomery & Halter, May 22 ..... *144
Rocky Mountain Electrical League holds panel on public relations (N) May 1 13
Rural Electrical Contractors Assn.—Co-ops blamed, REA praised (N) Feb. 28 57

Rural Electrification:
Alabama coop loan permit invalidated by judge (N) Feb. 7 14
Alabama Electric Coop allowed to borrow from REA (N) Feb. 21 20
Baled hay cured at 2 kwhr per bale. Hall & Cook, Jan. 31 ..... *82
Chickahominy Electric coop refused territory (N) Jan. 3 25
Chickenhouse litter-stirrer saves work, Apr. 24 ..... *108
Cow conveyor speeds milking, June 19 ..... *112
Dairyland Power Coop denies being utility to avoid labor arbitration (N) Feb. 28 59
Dairyland Power Coop—Wisconsin court holds public utility anti-strike law unconstitutional (N) Mar. 27 .. 83
Dept. of Agriculture to study effects of electrification (N) Jan. 10 13
Electric brooders pay for home electric equipment. J. W. Hall, Feb. 14 .*118
EEI farm electrification statistics (N) Apr. 24 63
E.E.I. President Oakes says rural power will be done by 1951 (N) June 5 86
Electric egg cleaner, May 8 ..... *120
Farm service makes strides in Virginia. L. L. Koontz, Apr. 24 108
Floating heater de-ices watering trough, Apr. 10 ..... *148
Guide for service attachments at poles and buildings, Jan. 31 ..... *74
Hay curing averages 60 kwhr per ton, Feb. 28 ..... *97
Kentucky co-ops set up state office (N) Jan. 3 24
Load analysis is necessary to meet tomorrow's requirements, May 22 .. *103-132
Michigan co-op gets loan to build gas lines (N) May 8 70
Missouri Edison not to be bought by coops (N) Jan. 3 27
Motor and blower for silo tested. Hall & Cook, Mar. 27 ..... *130
Multiple points of supply increase profits of coops (N) Jan. 17 133
NRECA establishes retirement and security program for co-ops (N) Apr. 17 13
NRECA resolutions directing Congress (N) Mar. 27 35
New Hampshire coop votes to purchase White Mountain Power (N) Mar. 20 4
Northeast Missouri Electric coop plans new station (N) Mar. 6 19
Oil circuit recloser mountings and connections, Mar. 13 ..... *124
Otero, N. M., co-op to buy Capitan Light & Power (N) Mar. 6 6
Percentage of farms using electricity Dec. 30'47 (map) Apr. 24 64
Pigs fattened by overtime lighting. W. J. Davis, Mar. 13 140
Pole framing for rural lines 7.2/12.5 Y kv. single phase, Mar. 27 ..... *120
Portable blower saves corn, Jan. 31 .. *84
Small fairs bring rural service results. W. C. Buchanan, Apr. 24 ..... *110
Southwest Utah Power & Development coop formed (N) Mar. 13 90
Step-up station mounted on platform, Jan. 7 ..... *190
Tests of ensilage cutters driven by 7½-hp motors. Hall & Cook, Apr. 10 ..... *144
Texas coops purchase lines from San Antonio (N) Mar. 13 94

Rural Electrification Administration:
Administrative funds approved (N) June 12 4
Appropriations for loan funds likely soon (N) Mar. 6 12
Appropriations voted (N) Apr. 10 90
Chief Engineer of Power Div. appointed (N) June 5 87
Cleared of charges by Senators (N) Feb. 14 72
Dairyland Power Co-op case reopened by Wisconsin Supreme Court (N) June 19 72
Funds granted in Deficiency Bill (N) May 1 19
Loan fund recommended by House Committee (N) Mar. 20 4
New assistant administrator (N) Jan. 10 19
Notifies older co-ops to do own bookkeeping (N) Jan. 17 131
Political finagling is charged by ex-employee (N) Jan. 31 38
Power Division OK's new loans (N) June 26 14
Power Division set up (N) June 19 .. 70
Report accompanied by utilities blast by Wickard (N) Jan. 24 4
REA operations 1945-1947 (table) Jan. 17 170
Russia—Steiger accepted as Magidoff successor (N) Apr. 24 60

S

Safety:
Accident prevention a top responsibility. A. T. O'Neill, June 5 ..... *94
Cutting fire hazards around induction heaters, Feb. 28 86
EEI Accident Prevention Committee fears new intangible factors (N) May 15 6
For safer testing of generator leads, May 8 110
Goating men to safety in the Wisconsin Power & Light (N) Mar. 13 92
Safe tool cut accidents, Wisconsin Public Service, Jan. 3 ..... *68
Salesmen—Must be recruited and trained, Mar. 27 ..... *90
Scientific methods assure better selection of sales personnel. P. W. Siekman, Jan. 3 ..... *43
Salt River Valley Water Users' Assn.—Elects Searles president (N) May 15 13
IBEW to continue pact (N) Apr. 24 .. 63
Screw driver, electric. G. N. Burkhart, Jan. 31 ..... *62
Scrap—Pneumatic cutter for severing junk conductor. John Gibson, Mar. 13 ..*132
Seattle Electrical Contractors Assn.—Anti-Trust Act charges (N) Jan. 31 39
Plead innocent to conspiring to set prices (N) Feb. 28 59
Securities & Exchange Commission—Five-man board filled (N) June 5 85
Hanrahan elected head (N) May 29 .. 14
1947 approvals listed (N) Jan. 3 22
Servo-mechanism—Mechanical computer would refine governing. T. E. Curtis, Feb. 28 ..... *78

Ship power see Floating power
Shows—Texas Electric Show issues novel invitations, Mar. 27 ..... *135
South Carolina Electric & Gas (N) May 1 19
Sale approved (N) June 12 6
South Carolina Power may be sold to South Carolina Electric & Gas, commission decides (N) Jan. 3 25
Sale not stopped by South Carolina Authority (N) Apr. 24 64
Southeastern Electric Exchange—Accounting conference (N) Apr. 10 .. 91
Conferences (N) Apr. 17 4
Engineering and Operation Section meetings (N) May 15 13
Southern California Edison starts Redondo Beach unit (N) Mar. 13 95
Southern Rocky Mountain Power organized, now plans merger (N) May 21 100
Southwestern Electric Service granted Rusk franchise (N) Mar. 27 80
Southwestern Gas & Electric (N) Jan. 31 38
Southwestern Public Service (N) Jan. 31 42

Statistics:
Appliance production doubles in 1947 (table) Jan. 17 169
Bureau of Labor Statistics allows 1,200 kwhr in "city workers budget" (N) Jan. 3 25
Central station customers 1946, 1947 (table) Jan. 17 158
Classification of energy sales, Oct., 1947 (N) Jan. 31 40
Construction expenditures 1933-1948 (chart & tables) Jan. 17 162
Electrical manufacturing industry 1937-1947 (charts & tables) Jan. 17. 168
Electrical World's survey of electric power industry indicates increase (N) Jan. 17 129
Energy sales 1934-1947 (charts & tables) Jan. 17 154
Financial income and expenses 1937-1947 (charts & tables) Jan. 17 159
Generating capacity 1933-1947 (chart & tables) Jan. 17 144
Highlights of 1947, Jan. 17 139
NEMA rates electrical industry production for 1948 (N) Jan. 10 11
New capacity added to generating stations in 1947 and to be added in 1948 and 1949 (charts & tables) Jan. 17 146
Number and installed capacity of electric utility generating plants by states and type of prime mover as of Nov. 1, 1947 (table) Jan. 7 150
Output of energy 1933-1947 (charts & tables) Jan. 17 142
Outstanding facts 1940-1947 (table) Jan. 17 141
Revenue from electricity sales 1934-1947 (charts & tables) Jan. 17 156
REA operations 1945-1947 (table) Jan. 17 170
Rural line construction 1944-1948 (charts & tables) Jan. 17 165
Station economics 1934-1947 (charts & tables) Jan. 17 152
Transmission and substation construction 1944-1948 (charts & tables) Jan. 17 164
Trends in electricity output (chart) Jan. 17 140
Utility employment and wages 1933-1947 (charts & tables) Jan. 17 166

Steam Stations and Developments:
Central Louisiana Electric to open outdoor station (N) June 19 71
Delta steam plant proposed for Central Valley Project (N) Feb. 14 73
Economics of reheat (Ed.) June 19 63
Exhaust steam noises quieted by silencers, Feb. 14 ..... *96
Lake Catherine power plant taken over by Arkansas Power & Light Co. (N) June 12 11
Maintenance expenditures 1939-1946 (tables) Jan. 17 151
Maintenance of station equipment raises problems for PEA utilities (N) May 22 97
Potomac Electric Power's smoke stacks said to interfere with planes (N) May 15 ..... *5
Southwark Station (picture feature) May 29 16
Sporn Station on Ohio River design achieves efficient low-cost operation. Philip Sporn, Jan. 3 ..... *30
Superheater uses emergency gaskets, Mar. 13 134
TVA appropriation bill passed without New Johnsonville steam plant (N) June 26 5
TVA's fight to get New Johnsonville steam plant, Tenn. (N) Jan. 24, 11; (N) Feb. 7, 5; (N) Feb. 14, 78; (Ed) Mar. 27, 75; (N) May 8, 70; (N) May 15, 4; (N) May 29 12
Three Connecticut utilities acquire steam plant site (N) Apr. 24 65

Substations:
Construction expenditures for transmission and substations 1944-1948 (charts & tables) Jan. 17 164
Estimating substation costs. L. M. Applegate, Apr. 24 ..... *88
Gas cable fortifies substation. Titus & Thomas, Jan. 3 ..... *34
How to make earth resistance tests at substations, May 8 ..... *102
Jamaica Substation, Consolidated Edison, saves space with double-deck construction. A. M. De Bells, Apr. 24 ..... *75
Kindorff conduit hanger used in substation work, Jan. 17 ..... *194
Symmetrical layouts aid substation economy, Feb. 28 ..... *84
Unit substations reduce line losses at mill, Apr. 10 ..... *138
Surplus property—Sale of surplus Oklahoma power plant up to WAA (N) Jan. 31 38
Sweden—Builds a 380-kv line—studies 440-kv d-c. E. Hansson, Apr. 10 ..*114

Switches and Switching:
Acorns put in switch cause short circuit (N) Jan. 24 ..... *5
Heavy duty head for switch stick, Jan. 3 ..... *48
Oil disconnecting switches take care of underground transformers. F. A. Bolien, Apr. 24 ..... *100
Switchboard panel made locally, Apr. 10 ..... *128

T

Taxes—Fuel surcharge added (N) Mar. 20 4
Taxes and the stockholder. L. P. Stack, June 5 ..... *95
Telephones—IT&T dedicates microwave test tower (N) May 29 ..... *14
Interlex reservation unit demonstrated to public (N) May 29 .... *11
Single-sideband carrier telephone gives high voice quality. F. S. Beale, Mar. 27 ..... *103

Television:
EEI Committee to study effects of television use (N) June 12 12
Los Angeles experience shows power lines cause no video interference. I. L. Bateman, May 8 ..... *86
"Telequizzicals" promote television. Robert Latimer, Feb. 14 120
Usage growing reports G.E. at sales meeting of E.E.I. (N) Apr. 10 93
Tennessee Valley Public Power Assn. meeting (N) Apr. 3 6

Testing and Tests:
Cold-collar test of high-voltage bushing, Apr. 24 ..... *102
Dynamometer, high precision, for testing motors. J. E. Duff, June 19 *96
Emergency polarity check with glow lamp. A. F. Stilson, May 22 ..... *150
High frequency discharge tests plastic lining leaks. B. W. Whitehurst, Jan. 3 48
Inflated dumbbell for testing pipe welds. G. L. Rhodes, Jan. 31 ..... *76
Is your relay test program realistic? F. S. Fehr, May 8 ..... *88
Mitigating surface during bushing tests, June 5 ..... *124
Portable meter and relay test set. G. W. Parker, Jan. 3 ..... *66
Spectrometer detects transformer leaks, Jan. 17 ..... *190

(Ed) Editorial. * Illustrated. (N) News. (D) Digest.

Test box checks timing of oil circuit breakers, Mar. 13 ..... *120
Test and inspect bushing transformers, Mar. 27 126
Tests of ensilage cutters driven by 7½-hp motors. Hall & Cook, Apr. 10 ..... *144
Tests of 7½ hp motor for silo elevator. Hall & Cook, Mar. 27 ..... *130
Texas Power & Light (N) Jan. 24 6
Purchases Owentown power installations (N) June 19 70
Thermometers—Reuniting mercury in test thermometers, Jan. 17 192
Timers—Neon timer releases oscillograph element. C. J. Tirk, Feb. 14 ..... *108

Training:
Fire-fighting instruction includes close contact with heat and smoke. W. Rossnagel, Feb. 28 ..... *62
Power courses in technical schools await utility support. A. E. Knowlton, June 19 ..... *77
Salesmen must be recruited and trained, Mar. 27 ..... *90
Wanted—32 high school seniors. H. E. Dexter, Mar. 27 106

Transformers:
Auto air valve checks transformer tightness. W. W. La Barr, Jan. 17. *175
Chart determines copper temperature rise. G. F. Banks, June 5 ..... *116
Clearing water-cooling coils internally, Jan. 3 ..... *47
Damaged transformer carries unbelievable load. N. J. Galuppo, May 8 *98
Dolly cradle carries distribution transformers, Jan. 3 ..... *48
Fire protection for substation transformers of State Island Edison by emulsion-forming spray. J. J. Burri, June 19 ..... *89
High-reactance transformers supply limited load current for many uses. J. A. Uttal, Jan. 31 ..... *50
How to calculate power factor of transformer type welders. R. F. Wyer, Apr. 24 ..... *96
How to check ratio of bushing transformer, Mar. 27 ..... *126
Industrial transformers need thorough check-ups, Mar. 13 130
Insulation test on oil circuit breaker transformers, Jan. 3 46
Large transformers grow smaller with improvements in design. Frank Snyder, Feb. 28 ..... *74
Leads dead-ended directly on transformer simplifies installation, Mar. 13 ..... *128
Life of windings on rotating machines. A. F. Ayres, pt. 1, May 22, 152; pt. 2, June 5; pt. 3, June 19.. 106
Making best use of a transformer dryer, May 8 114
Mitigating surface during bushing tests, June 5 ..... *124
New bushing arrangement for distribution transformer June 5 ..... *106
95-ton transformers righted without crane, May 8 ..... *95
Rural step-up station mounted on platform, Jan. 18 ..... *190
Spectrometer detects transformer leaks, Jan. 17 ..... *190
Test and inspect bushing transformers, Mar. 27 126
Three-winding transformers for feeder regulators. T. L. Rundlett, Apr. 10. *124
Transformer tags included with pole identification, Jan. 31 ..... *78
Transformer temperatures — graphically. Paul Narbutovskin, Jan. 3.. *40
Two transformers in one case, Jan. 17 ..... *174

Transmission:
Angle pole conostruction for 11-kv and 22-kv lines, Apr. 24 ..... *92
Boring machine and claim shell sink tower footings. June 19 90
Capped pole supports transmission tower. A. Bissiri, Mar. 27 ..... *122
Canyon crossing, Idaho, uses 6688-ft. span, Mar. 27 ..... *122
Construction expenditures for transmission and substations 1944-1948 (charts & tables) Jan. 17 164
Curved taps insure against mechanical failure, May 22 ..... *138
Damping combination stops span vibration. E. M. Wright, Feb. 14.. *112
Getting a line across Missouri River with helicopter unsuccessful (N) May 22 99
Ice removal from line broken by chain line, Feb. 28 ..... *94
James River span requires varied tower designs. H. W. Furlong June 19 *75
Mechanical loading of wood pole, Feb. 28 ..... *90
No power lines to be run through Indian Reservation unless they have service too (N) Apr. 10 91
Northwest scheduled to have new transmission lines (N) Mar. 13 92
Organized tree trimming analyzed June 19 108
Overhead line estimating. T. H. Guck, pt. 1, May 22, *146; pt. 2, June 5, *108; pt. 3, June 19 100
Pole framing for rural lines 7.2/12.5 Y kv single phase, Mar. 27 ..... *120
Primary and secondary dead ends, Jan. 17 ..... *182
Short method for calculating voltage regulation on transmission line. R. N. Early, June 19 ..... *102
Stringing operation for 6,688 foot span, Apr. 10 ..... *136
Suspension clamp power tests. Alfio Bissiri, Jan. 3 ..... *58
Sweden builds a 380-kv line—studies 440-kv d-c. E. Hansson, Apr. 10.. *114
Symmetrical design for junction tower, Jan. 31 ..... *76
Table shortens voltage drop calculations. C. C. Hoxe, Mar. 27 110
Tower is lifted and moved by cranes, Jan. 31 ..... *68
Transmission line structures designed to utilize full pole strength. Borcher & Cofer, May 8 ..... *92
Two-way radio simplifies sagging-in procedure on transmission lines, Jan. 31 ..... *60
West Virginia right-of-way treated to improve soil, June 19 ..... *100

Trucks:
Bomb trailers excellent for material transport. C. L. Richey, Mar. 27.. *107
Care and handling of a filter press truck, Apr. 24 ..... *85
Improved materials handling cuts crew dead time. C. L. Richey, June 19 ..... *80
New boom truck saves times on construction, Apr. 10 ..... *120
Southern California Edison uses "Power Wagon" for tough assignments, Jan. 3 ..... *68
Tucson Gas, Electric Light & Power suit ended by Tucson (N) May 22 97

U

Underground Construction:
Oil disconnecting switches take care of underground transformers. F. A. Bolien, Apr. 24 ..... *100
Trees, ice, service (Ed) Jan. 31 44
Underground vaults house storage batteries. Booth & Holland, Mar. 13.. *128
Union Electric of Missouri loses tax cause (N) May 1 5
Show reveals 1947 activities (N) Apr. 24 62
United Light & Railways Service Co. power pool interconnects four states (N) June 26 13

U. S. Bureau of Reclamation:
Accounting criticised (N) Mar. 20.. 5
Straus will get no pay if House foes have way (N) May 22 99
Student engineers employed (N) June 5 82

V

Virginia Electric & Power comes to terms with employees (N) Apr. 10 95
Headed for foremen's union fight (N) Jan. 10 14
Labor negotiations fail (N) Feb. 21.. 12
Ordered to give service (N) Jan. 3.. 25

Voltage Regulation:
Compensator setting chart for feeder voltage regulators. P. E. Benner, Feb. 14 ..... *102
Short method for calculating voltage regulation on transmission line. R. N. Early, June 19 ..... *102
Voltage limiter for magnetic oscillographs. C. J. Tirk, Apr. 10 ..... *136
Voltage regulated for high-frequency tools. R. L. Gomon, May 8 ..... *98
Voltage regulating unit built into generator. R. L. Gomon, Apr. 24 ..... *90

W

Washington Water Power converts to a-c operation (N) June 5 85

Welding:
Comparative properties of grounding electrodes from study by Reinhold Rudenberg, Jan. 31 ..... *72
How to calculate power factor of transformer type welders. R. F. Wyer, Apr. 24 ..... *96
Inflated dumbbell for testing pipe welds. G. L. Rhodes, Jan. 31 ..... *76
Seam welding lap and butt joints. J. J. Riley, June 5 ..... *110
Wicket gates inlaid with stainless steel, Apr. 24 ..... *100
West Penn Power Memorial scholarship winners (N) May 29 ..... *13
Western Iowa Power's twenty year franchise defeated (N) Jan. 17 131
Westinghouse Electric—Presents scholarships for 4-H Better Methods Electric Contest (N) Jan. 3 ..... *25
White Mountain Power Co. purchase voted by New Hampshire coop (N) Mar. 20 4
Wind tunnel plans (N) Feb. 21 4
Wiring—"Spot the outlet" promotional game for adequate wiring (N), June 26 ..... *16
Straightener designed for reeled wire. Thomas Burgess, Feb. 14 ..... *97
Why and how of an adequate wiring program. M. R. Norton, Mar. 27 ..... *92
Wrenches, speed, handle house brackets, Jan. 31 ..... *78

X

X-rays—X-ray gage for material thickness. W. N. Lundahl, Mar. 13 ..... *116

(Ed) Editorial. * Illustrated. (N) News. (D) Digest

AUTHOR'S INDEX

ADKINS, E. M.: Mechanical loading of wood poles, Feb. 28 ..... *90
Angell, Robert M.: Pictures tell the company's story, May 8 ..... *87
Applegate, L. M.: A quick way to estimate substation costs, Apr. 24... *88
Ayers, A. F.: Life of windings on rotating machines, pt. 1, May 22, 152; pt. 2, June 5, *123; pt. 3, June 19.... 106

BANKS, GEORGE F.: Chart determines copper temperature rise, June 5..*116
Banky, J. N.: Fault currents estimated from curves, Mar. 13 ..... *108
Bary, Constantine: Load research findings help to foresee future conditions, May 22 ..... *127
Bateman, I. L.: No television interference, May 8 ..... *86
Beale, F. S.: Single-sideband carrier telephone gives high voice quality, Mar. 27 ..... *103
Benner, P. E.: Compensator setting chart for feeder voltage regulators, Feb. 14 ..... *102
Bennett, H. H.: Utilities' stake in soil conservation, June 5 ..... *91
Bingham, H. C.: Secondary distribution design, Jan. 3 ..... *54
Bissiri, Alfiro: Capped pole supports transmission tower, Mar. 27..... *122
Suspension clamp power loss tests, Jan. 3 ..... *58
Bolien, F. A.: 3-way oil-disconnects switch underground transformers, Apr. 24 ..... *100
Booth, James & W. A. Holland: Underground vaults house storage batteries, Mar. 13 ..... *128
Borchers, A. J. & T. N. Cofer: Transmission line structures designed to utilize full pole strength, May 8.. *92
Bowner, C. B.: Six variables in ground resistance studied for 18 years, Jan. 3 ..... *37
Browning, E. H. & C. E. Valentine: Controlling power input to arc furnaces, June 5 ..... *120
Bryan, Charles E.: Tennessee utility adopts aluminum for distribution circuits, Feb. 28 ..... *64
Buchanan, W. C.: Small fairs bring rural service results, Apr. 24 ..... *110
Burgess, Thomas: Straightener designed for reeled wire, Feb. 14 ..... *97
Burkhart, G. N.: Electric screw driver, Jan. 31 ..... *62
Burri, J. J.: Providing fire protection for transformers, June 19 ..... *89
Burt, J. F.: Why electric cooking needs industry promotion, Mar. 27..... *94

CADE, M. J.: Installing 110-kv oil-pipe cable in old New Orleans, Feb. 28 *70
Cisler, Walker L.: Electric power and our national defense, Feb. 14..... 86
Cofer, T. N. & A. J. Borchers: Transmission line structures designed utilize full pole strength, May 8..... *92
Colon, Julio: Use of concrete poles in Mexico, Mar. 13 ..... *106
Cook, A. W. & J. W. Hall: Baled hay cured at 2 kwhr per bale, Jan. 31. *82
Test of ensilage cutters driven by 7½-hp motors, Apr. 10 ..... *144
Tests of 7½ hp motor for silo elevator, Mar. 27 ..... *130
Curtis, T. E.: Mechanical computer would refine governing, Feb. 28..... *78

DAVIS, E. W.: Insulation properties of Buna S and natural rubber, Mar. 27 ..... *118
Overload calculations for cable current ratings, Apr. 10 ..... *134
Properties of Buna S insulation for wires and cables, Mar. 13..... *122
De Bellis, A. M.: Bulk-power substation saves space with double-deck construction, Apr. 24 ..... *75
De Moya, P. Paul: Electricity aids processing of potatoes, Jan. 17..... 198
Dexter, Harris E.: Wanted—32 high school seniors, Mar. 27 106
Dickerson, A. F.: Potentialities of modern white-way lighting, Mar. 13. 138
Duff, J. E.: Accurate electrical dynamometer, June 19 ..... *96

EARLY, R. N.: Short method for calculating voltage regulation on transmission line, June 19 ..... *102

FEAMAN, M. M.: Ready and waiting . . . the water heating load, Mar. 27 ..... *96
Fehr, F. S.: Is your relay test program realistic? May 8 ..... *88
Finison, H. J.: Better for the power user? Mar. 13 ..... *97
Frank, Lester W.: Electric ranges stimulate other uses, June 19 ..... *84
Furlong, H. W.: James River span requires varied tower designs, June 19 ..... *75

GALE, RALPH E.: We make a bigger market for our appliance dealers, Mar. 27 ..... *100
Gallagher, R. A.: Why we push the "go all-electric" program, Mar. 27.... *88
Galuppo, N. J.: Damaged transformer carries unbelievable load, May 8. *98
Gibson, John: Pneumatic cutter for severing junk conductor, Mar. 13....*132
Two anchors in tandem give extra holding power, Jan. 14 ..... *100
Gomon, R. L.: Voltage regulated for high-frequency tools, May 8 ..... *98
Voltage regulating unit built into generator, Apr. 24 ..... *90
Gorman, W. D.: 5.4-kw fixture lights noted art gallery, Jan. 31 ..... *82
Gould, Frank R.: Generator laminations reinsulated in the field, Jan. 17..*171
Gruber, Albert: Modernization of one street lighting system, June 19.... *98
Guck, Theodore H.: Overhead line estimating, pt. 1, May 22, *146; pt. 2, June 5, *108; pt. 3, June 19..... 100

HALL, J. W.: Electric brooders pay for home electric equipment, Feb. 14.*118
Hall, J. W. & A. W. Cook: Baled hay cured at 2 kwhr per bale, Jan. 31 ..... *82
Tests of ensilage cutters driven by 7½-hp motors, Apr. 10 ..... *144
Tests of 7½ hp motor for silo elevator, Mar. 27 ..... *130
Halter, A. C. & T. B. Montgomery: Contact liquid rheostat uses stationary electrodes, May 22 ..... *144
Hansson, E.: Sweden builds a 380-kv line—studies 440-kv d-c, Apr. 10.*114
Harper, J. W.: Applying motors and control for wide-speed range, May 22 ..... *136
Hoke, Charles C.: Determine wire size by using loose change, May 8 ..... *116
Table shortens voltage drop calculations, Mar. 27 ..... *110
Holister, C. D.: Conference sells school lighting, Feb. 14 122
Holland, Wyman A. & James Booth: Underground vaults house storage batteries, Mar. 13 ..... *128
Hooker, H. Lester: Debt ratios and rate levels, June 5 ..... *93
Hopkinson, Edward, Jr.: Markets for electric utility securities, June 5..... *96

JACK, KIMBALL: Washington Water Power Co. seeks "better service" through service, Feb. 14 ..... *84
James, John R.: Hydraulic model aids plant design, Mar. 27 ..... *105
Johnson, Franklin J.: Precast concrete manholes speed installation time, May 22 ..... *148
Jones, R. E.: Tests of conductor ties, Jan. 31 ..... *78

KAUFMAN, LYNDEN J.: Supervisors study union relations, Jan. 31... 56
Keller, E. L.: Watthour meter accuracy can be preserved despite surge currents, Feb. 28 ..... *67
Kinck, Hakon: Radiant heating makes strides in Norway, Apr. 24..... *73
Kinnard, I. F.: New design of watthour meter has magnetic suspension, June 5 ..... *104
Kipp, E. B.: Shock mounts protect meters during transit, Feb. 28 ..... *86
Knowlton, Archer E.: Power courses await utility support, June 19 ..... *77
Knutz, W. H. & R. M. Schahfer: Connector limitations studied, Jan. 31 ..... *46
Short-circuit tests predict performance of corroded connectors, Feb. 14.. *80
Koontz, L. L.: Farm service makes strides in Virginia, Apr. 24..... 108

LA BARR, W. W.: Auto air valve checks transformer tightness, Jan. 17..*175
Lambert, R.: Delta-wye conversion brings metering problem, Jan. 31..... *66
Lang, Chester H.: Revolutions and road blocks, June 5 ..... *97
Larkin, Richard N.: Middle South development program opened by 4 ALMNO companies (N) Apr. 10. 89
Lasseter, J. A. & F. E. Treat: Spinner lashes aerial cable in field, Apr. 24 ..... *69
Latimer, Robert: "Telequizzicals" promote television, Feb. 14 120
Liebig, Carl: Complete relighting sold to schools, Apr. 24 ..... *73
Lundahl, W. N.: X-ray gage for material thickness, Mar. 13 ..... *116

MAIHL, G. W.: 17-year lightning study gets results, Apr. 10 ..... *103
Maize, Gordon J.: Planned lighting does build profit load, Mar. 27..... *98
Mann, Carey: High frequency heating aids rubber industry, May 8..... 120
McGraw, James H., a pioneer of the electrical industry, Feb. 28 60
Metcalfe, H. S.: A bigger job for the advertising manager, May 8..... 90
Montgomery, T. B. & A. C. Halter: Contact liquid rheostat uses stationary electrodes, May 22 ..... *144
Montgomery, W. L.: Treat pole tops for $1.08, June 19 ..... *92
Muzzillo, Mario F.: Electric snow melting for sidewalks, Apr. 10..... *124

NARBUTOVSKIH, PAUL: Transformer temperatures—graphically, Jan. 3 *40
Newhall, E.: Operating principles of fluorescent lamp starters, June 5.*112
Noble, H. A.: Scored journal bearing resurfaced on the job, Jan. 3..... *46
Norton, M. R.: Why and how of an adequate wiring program, Mar. 27.. *92

OAKES, CHARLES E.: It's time to start fighting, June 5 ..... *89
O'Neill, A. T.: Accident prevention a top responsibility, June 5 ..... *94

PARKER, GEORGE W.: Portable meter and relay test set, Jan. 3..... *66
Parvis, W. J.: Would overtime lighting fatten pigs faster? Mar. 13..... 140
Petzinger, A. J.: The case for the thermal meter, June 19 ..... *82
Potter, Ralph A.: Ball cages lighting serves varies uses, June 19 ..... *114
Price, Gwilym A.: 30,000 hours a minute, June 5 ..... *100
Purington, Ivan H.: Everything designed for service in new utility service building, Apr. 10 ..... *109

RANDS, O. O.: Series 480-v lighting is economical, Jan. 3 ..... *33
Rhodes, G. L.: Inflated dumbbell for testing pipe welds, Jan. 31..... *76
Richey, Carl L.: Bomb trailers excellent for material transport, Mar. 27..*107
Improved materials handling cuts crew dead time, June 19 ..... *80
Storage racks simplify pole handling, May 8 ..... *110
Ridenhour, W. L.: Is backup protection always necessary? Mar. 14..... *104
Riley, J. J.: Seam welding lap and butt joints, June 5 ..... *110
Robertson, A. D.: What is your motor IQ? May 8 91
Rossnagel, W. E.: Fire-fighting instruction includes close contact with heat and smoke, Feb. 28..... *62
Rotkin, I.: Atomic energy conversion factors, May 22 146
Rowton, Dana W.: Lighting recommendations for sports and recreational areas, May 8 106
New lamps reduce costs, Apr. 10....*112
Rudenberg, Reinbold: Comparative properties of grounding electrodes, Jan. 31 ..... *72
Rundlett, T. L.: Three-winding transformers for feeder regulators, Apr. 10 ..... *124

SANFORD, FRANK E.: Wire connections need more attention, May 8..... *79
Schahfer, R. M. & W. H. Knutz: Connector limitations studied, Jan. 31.. *46
Short-circuit tests predict performance of corroded connectors, Feb. 14 ..... *80
Sessel, Ben-Gleming: Acres of stockholders—all happy, Mar. 13..... *111
Sharp, Howard M.: Louvers and bowls solve lighting problem, Apr. 10..*108
Siekman, P. W.: Scientific methods assure better selection of sales personnel, Jan. 3 ..... *43
Snyder, Frank: Large transformers grow smaller with improvements in design, Feb. 28 ..... *74
Sporn, Philip: Sporn station design achieves efficient low-cost operation, Jan. 3 ..... *30
Spurr, A. C.: The utility and the community, June 5 ..... *99
Stack, Lee P.: Taxes and the stockholder, June 5 ..... *95
Stilson, A. F.: Emergency polarity check with glow lamp, May 22..... *150
Strait, E. N.: Sound rate design in tomorrow's economy, June 5..... *101
Stueve, W. H.: Converted "Big Inch" pioneers motorized centrifugals, June 19 ..... *86
Sutton, Harold S.: Who are our stockholders? June 5 ..... *102

(Ed) Editorial. * Illustrated. (N) News. (D) Digest.

TEMPLE, ALAN H.: A look at your earnings record, June 5.....*103
Thomas, J. B.: The future . . . a challenge, June 5..... *98
Thomas, J. D. & C. F. Titus: Gas cable fortifies substation, Jan. 3..... *34
Tirk, C. J.: Neon timer releases oscillograph element, Feb. 14.....*108
Voltage limiter for magnetic oscillograph, Apr. 10.....*136
Titus, C. F. & J. D. Thomas: Gas cable fortifies substation, Jan. 3..... *34
Treat, F. E. & J. A. Lasseter: Spinner lashes aerial cable in field, Apr. 24 ..... *69

UTTAL, J. A.: High-reactance transformers supply limited load current for many uses, Jan. 31..... *50

VALENTINE, C. E. & E. H. BROWNING: Controlling power input to arc furnaces, June 5.....*120
Van Aernam, J. H.: Blown fuse brings wiring information, Mar. 13.....*136

WALDRON, C. E.: Higher mounting reduces vandalism, Jan. 3..... 72
White, Donald W.: Electrically heated pitch pots speed lens production, Feb. 28 ..... *96
Whitehurst, H. W.: High-frequency discharge tests plastic lining leaks, Jan. 3 48
Whitwell, George E.: Selective selling is needed now, June 5..... *92
Wolff, Dr. N. N.: Pumped storage hydro costs per kw are competitive, May 8 ..... *83
Wright, E. M.: Damping combination stops span vibration, Feb. 14....*114
Wyer, R. F.: How to calculate power factor of transformer type welders, Apr. 24..... *96

YEAKEL, NELSON: Philadelphia meter practice in pictures, Jan. 31..... *58

(Ed) Editorial. * Illustrated. (N) News. (D) Digest.